

HAZARDOUS WASTE TANK SYSTEM ASSESSMENT

ARIA Heavy Metals Rinsate (HMR) System

Santa Clara, CA

Prepared for:

Apple, Inc.

1 Infinite Loop Cupertino, California 95014

Prepared by:

TRC

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October 2022

HAZARDOUS WASTE TANK SYSTEM ASSESSMENT

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I. INTRODUCTION

This assessment is specifically for the Heavy Metals Rinsate (HMR) System at the Apple, Inc. (Apple) ARIA facility (Facility), located at 3250 Scott Boulevard in Santa Clara, California.

This assessment was performed in accordance with the requirements of Section 66265.192 of Title 22 of the California Code of Regulations (22 CCR 66265.192), and included a physical inspection of the tank system and an evaluation of secondary containment. Portions of the HMR system were assessed separately in 2015 and 2019. This is a 5-year re-assessment per 22 CCR 66265.192(h)(1) to bring all systems at the facility onto the same assessment schedule.

II. PURPOSE

22 CCR 66265.192 requires that owners of a new hazardous waste tank system (subject to 22 CCR 67450.2 "Permit by Rule") to ensure that the tank system is adequately designed and constructed, and obtain and keep on file at the Facility a written assessment reviewed and certified by an independent, qualified, professional engineer, registered in California that attests to the tank system's integrity.

The written assessment shall determine that the tank system is adequately designed and has sufficient structural strength and compatibility with the waste(s) to be transferred, stored or treated to ensure that it will not collapse, rupture, or fail.

At a minimum, the assessment for an above-ground system shall include the following information: 1) design standard(s) according to which the tank and ancillary equipment have been constructed; 2) hazardous characteristics of the waste(s) to be handled; 3) foundation and seismic anchorage design.

All new tank systems shall be tested for tightness, and determined to be free of leaks before being placed in use.

In accordance with 22 CCR 66265.192(h)(1), the assessment is valid for a maximum period of five (5) years, and shall include all of the information described in 22 CCR 66265.192(k). The required assessment information is presented in the following Section III.

III. ASSESSMENT AND FINDINGS

22 CCR 66265.192(k)(1)

The tank system consists of three lift stations SLW-LS2, HMR-LS, HMC-LS) and the Heavy Metals Concentrate Collection Cabinet (HMC-CC) that were previously assessed and certified when newly installed in 2015, the equalization tank (HMR-TNK-2), a pH adjustment tank (HMR-TNK-3), equalization tank (HMR-TNK-4), vacuum distillation evaporator (VDE-1), heavy metal concentrate tank (HMC-TNK-2), and ancillary piping. The slurry waste lift station (SLW-LS2) is a vertical rectangular tank constructed of white polypropylene and has a primary tank capacity of 142 gallons. The heavy metal rinsate and concentrate lift stations are vertical rectangular tanks constructed of white polypropylene and have a primary tank capacity of 80 gallons and a secondary tank capacity of 110 gallons. The first equalization tank (HMR-TNK-2) is a vertical cylindrical tank constructed of high density polyethylene with a capacity of 1100 gallons. The pH adjustment tank (HMR-TNK-3) is a vertical rectangular tank constructed of



white polypropylene with a capacity of 675 gallons. The second equalization tank (HMR-TNK-4) is a vertical rectangular tank constructed of white polypropylene with a capacity of 540 gallons. HMR-TNK-3 and HMR-TNK-4 are partitions of a single horizontal rectangular tank. The heavy metal concentrate tank (HMC-TNK-2) is a vertical cylindrical tank constructed of fiberglass and vinyl ester resin (FRP) with a capacity of 2300 gallons.

22 CCR 66265.192(k)(2)

HMR-TNK-2

The first equalization tank (HMR-TNK-2) is constructed of variable thickness HDPE per ASTM D1998 design standards. Ancillary piping is Schedule 40 (SCH-40) CPVC with clear PVC containment pipe, where applicable. See Figure 1 for pipe sizes. The HMR-TNK-2 skid includes two (2) 5-hp vertical centrifugal pumps. The tank is 5 feet 4 inches in diameter and 7 feet 5 inches in height. A drawing of HMR-TNK-2, with dimensions is included in Attachment 1.

HMR-TNK-3 and HMR-TNK-4

The heavy metal rinsate pH adjustment (HMR-TNK-3) and equalization (HMR-TNK-4) tanks are constructed of ¾"-thick white polypropylene per DVS 2205 design standards. Ancillary piping is CPVC piping with clear PVC containment pipe as well as PFA tubing with clear PVC containment pipe, where applicable. See Figure 1 for pipe sizes. The heavy metal rinsate pH adjustment tank uses two (2) polypropylene pneumatic diaphragm pumps each capable of 30 GPM at 30 feet TDH using 20 SCFM of air at 40 PSI. The complete tank (HMR-TNK-3 and HMR-TNK-4) is 5 feet wide, 7 feet long, and 6 feet tall. A drawing of HMR-TNK-3&4, with dimensions is included in Attachment 2.

HMC-TNK-2

The heavy metal concentrate tank is constructed of variable thickness fiberglass and vinyl ester resin (Hetron 992) per ASTM D3299 and D4097 design standards. Tank system structural design is in accordance with CBC 2013 and ASCE 7-10. Ancillary piping is Schedule 80 (SCH-80) CPVC piping with clear PVC containment pipe, where applicable. See Figure 1 for pipe sizes. The heavy metal concentrate station is pumped out as needed using a mobile vacuum pump. The tank is 7 feet in diameter and 8 feet in height. A drawing of the tank, with dimensions, is included in Attachment 3.

HMC-LS/HMR-LS/SLW-LS2/HMC-CC

The heavy metals rinsate and concentrate lift stations, the slurry waste lift station and the heavy metals concentrate collection cabinet are constructed of 3/4"-thick white polypropylene per DVS 2205 design standards. Structural design is in accordance with CBC 2013 and ASCE 7-10. Ancillary piping is Schedule 80 (SCH-80) PVC with clear PVC containment pipe, where applicable. See Figure 1 for pipe sizes. The lift stations each utilize two (2) internal 1-hp stainless steel submersible pumps. Tank drawings with dimensions are included in Attachment 5-7.



22 CCR 66265.192(k)(3)

HMR-TNK-2 and HMC-TNK-2 and their ancillary equipment were constructed in 2015, and repurposed as part of this system in 2019. HMR-TNK-3, HMR-TNK-4, and ancillary piping are newly constructed. HMR-LS, HMC-LS, HMC-CC and SLW-LS2 and their ancillary equipment were constructed in 2015

22 CCR 66265.192(k)(4)

All tanks are located on the ground level within an epoxy-coated concrete berm area. The bermed area is sloped to drain to collection sumps that are equipped with liquid sensors that would detect a leak from a tank or related ancillary piping.

The lift stations are double-walled and the space between the primary and secondary tanks is equipped with a liquid sensor that would detect a leak from the primary tank. The lift station pit is epoxy-coated and is equipped with a liquid sensor that would detect a leak from the lift stations and related ancillary piping.

The heavy metals concentrate collection cabinet is equipped with an internal liquid sensor that would detect a leak from the drums or elsewhere within the cabinet.

All automated systems, including liquid sensors for leak detection, are tested regularly to confirm operation as designed.

22 CCR 66265.192(k)(5)

The tank system is entirely above-ground and materials are not subject to corrosion.

22 CCR 66265.192(k)(6)

All tanks and lift stations are equipped with ultrasonic level sensors to prevent overflow. All automated systems, including liquid level sensors and pump controls are tested regularly to confirm operation as designed.

22 CCR 66265.192(k)(7)

All tanks and ancillary piping are located on the ground level within an epoxy-coated concrete berm area. The bermed area is sloped to drain to a collection sump and is also connected by a weir to the lift station pit (also epoxy-coated concrete) with adequate capacity to contain the full volume of the tanks. Double walled piping is also fitted with ports that would allow for collection of the leaked liquid when there is not a direct connection back to the lift stations.

The slurry waste lift (SLW-LS2) station and heavy metals lift stations (HMC-LS/HMR-LS) are set within secondary containment tanks (also ¾"-thick polypropylene) with capacity of 142 and 110 gallons, respectively. The heavy metals concentrate lift station (HMC-CC) has a secondary containment capacity of 78 gallons.

Along with the leak detection systems described above, the secondary containment for the tank system meets the standards of 22 CCR 66265.192(j) and 22 CCR 66265.193.



22 CCR 66265.192(k)(8)

The system generally handles heavy metals (potentially toxic) waste liquids generated from laboratory activities.

22 CCR 66265.192(k)(9)

No structural damage or inadequate construction/installation items (cracks, punctures, or damaged fittings) were observed.

22 CCR 66265.192(k)(10)

All ancillary pipe was leak tested using air-pressure when installed, test results are included as Attachment 4.

All tanks and lift stations were leak tested by the manufacturer prior to transport to the Facility.

22 CCR 66265.192(k)(11)

Based on the findings of this assessment, the tank system has an estimated remaining service life of approximately 20 years under existing conditions. The estimated remaining service life should be re-evaluated every five (5) years, in conjunction with the re-assessment in accordance with the requirements of 22 CCR 66265.192(h)(1).



IV. CERTIFICATION

ARIA Heavy Meatals Rinsate System October 2022

22 CCR 66265.192 requires that owners of a new hazardous waste tank system (subject to 22 CCR 67450.2 "Permit by Rule") ensure that the tank system is adequately designed and constructed, and obtain and keep on file at the Facility a written assessment reviewed and certified by an independent, qualified, professional engineer, registered in California that attests to the tank system's integrity.

The preceding written assessment has determined that the tank system is adequately designed and has sufficient structural strength and compatibility with the waste(s) to be transferred, stored or treated to ensure that it will not collapse, rupture, or fail. This assessment for an above-ground system considered the following: 1) design standard(s) according to which the tank and ancillary equipment have been constructed; 2) hazardous characteristics of the waste(s) to be handled; 3) foundation and seismic anchorage design.

The tank system was inspected on October 19, 2022. The visual inspection found none of the following to be in evidence: leaks, weld breaks, punctures, scrape of protective coatings, cracks, corrosion, structural damage or installation defects.

As required by 22 CCR 66265.192(k)(11), based on the findings of this assessment, I estimate that the new tank system has at least twenty (20) years of service life under current conditions. In accordance with 22 CCR 66265.192(h)(1), this assessment is valid for a maximum period of five (5) years and the tank system should be re-assessed at that time to obtain a new estimate of remaining service life.

Based on my assessment of the tank system, I can attest that the tank system has sufficient structural integrity, is acceptable for transferring, storing and treating the intended hazardous waste, and is suitably designed to achieve the requirements under 22 CCR 66265.192.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to be the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Stephen V. Huvane, P.E. Civil (CA) No. 52385



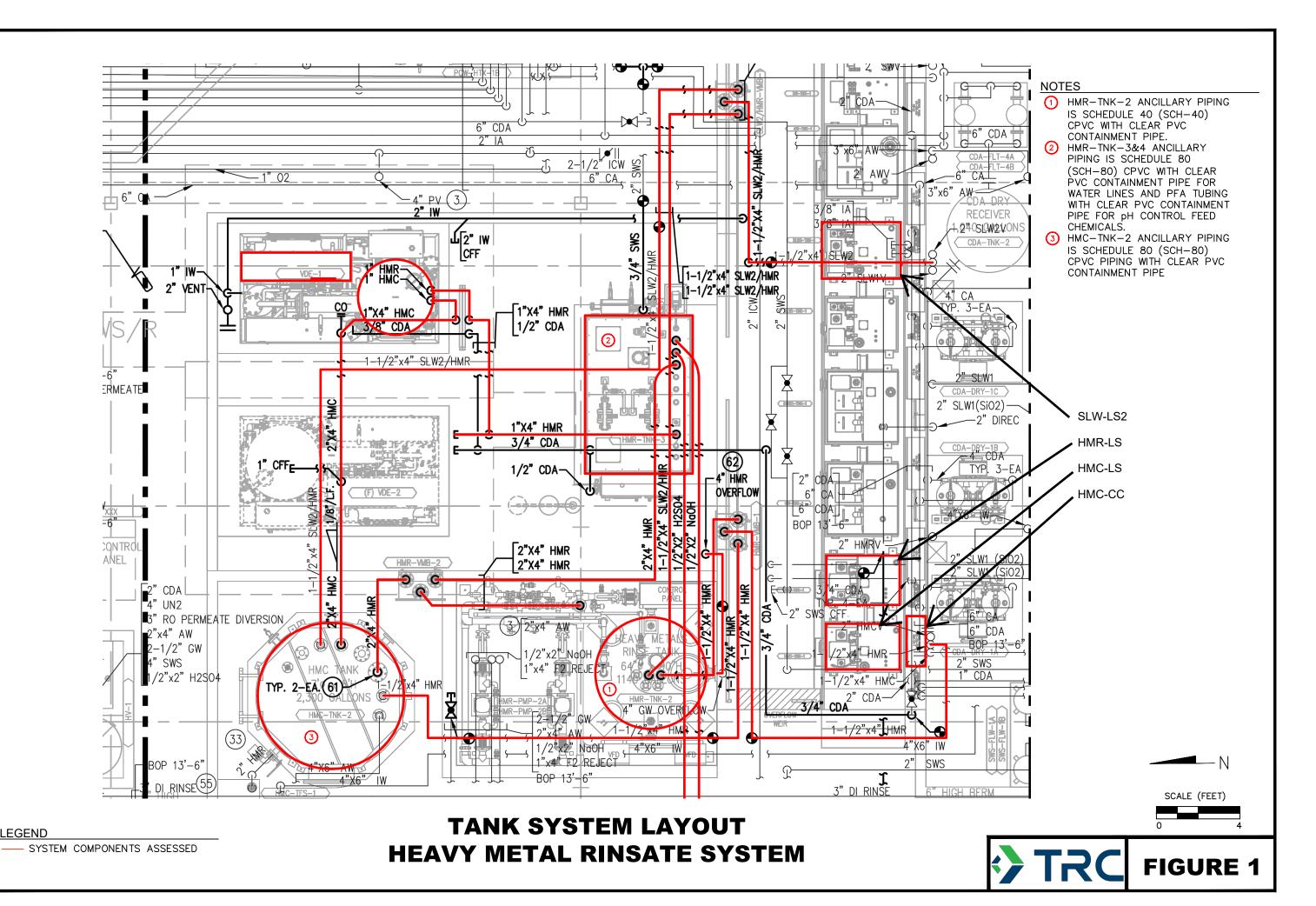
12/21/22

Date



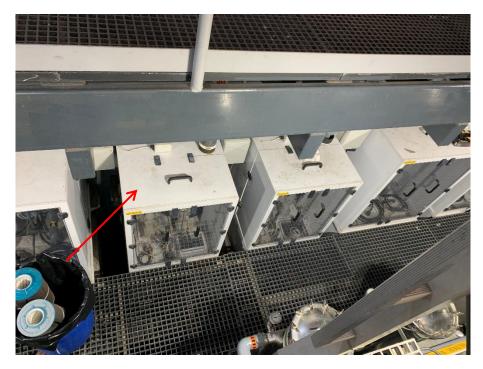
FIGURE 1

TANK SYSTEM LAYOUT



APPENDIX A

PHOTOGRAPHS (OCTOBER 19, 2022)



Slurry Waste Lift Station (SLW-LS2) in Containment Pit



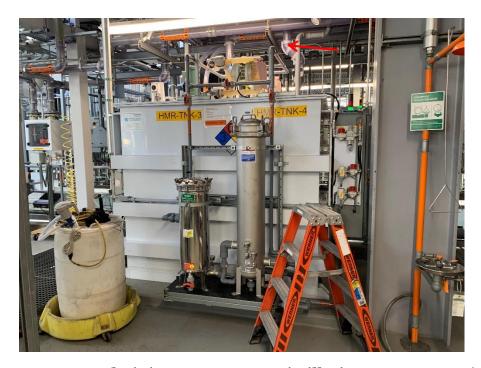
Heavy Metal Rinsate and Concentrate Lift Stations in Containment Pit



HMR-TNK-2



Heavy Metals Concentrate Collection Cabinet (HMC-CC)



HMR-TNK-3&4 and piping to Vacuum Distillation Evaporator (VDE-1)



Piping from HMR-TNK-3 to VDE-1



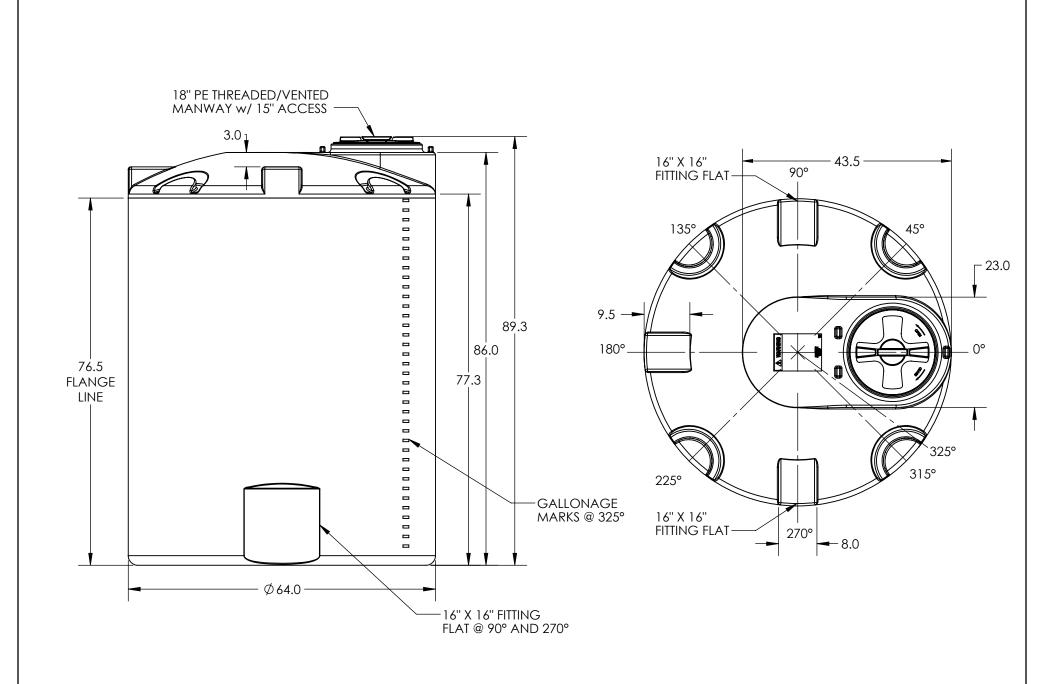
Piping to VDE-1 (left) and piping to HMC-TNK-2 (right)



HMC-TNK-2 and piping to Heavy Metal Concentrate Pull Station (HMC-TFS-1)

ATTACHMENT 1

HMR-TNK-2 INFORMATION



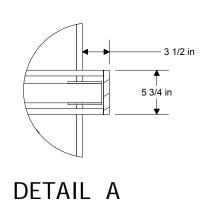
*ALL EXTERNAL PIPING MUST BE INDEPENDENTLY SUPPORTED.
*ONLY BASE FITTINGS TO BE LEFT INSTALLED AT TIME OF SHIPMENT PER SII PROCEDURE.
*Consult Snyder's Guidelines for Use and Installation prior to delivery.
Available on-line at http://www.snyderindustriestanks.com/Technical

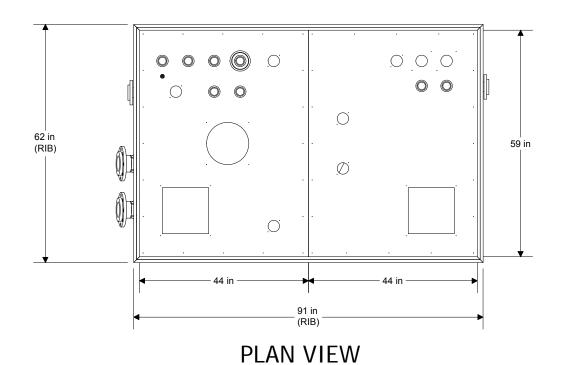
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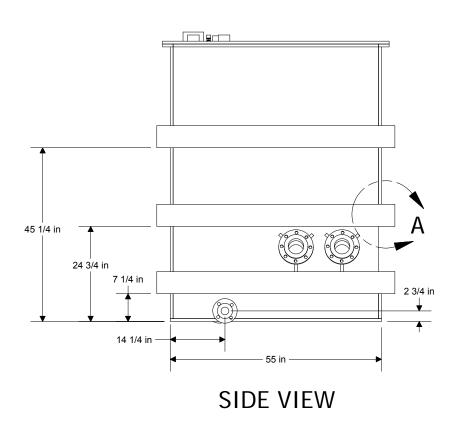
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STATUS:	Released	ET3	07/30/2013	INDUSTRIES, INC.	#	ASM TK	1100	VDT X 64	A
	© SNYDER INDUSTRIES	INC., 2014	!	4700 Fremont Street Lincoln, NE 68504					SHEET 1 OF 1
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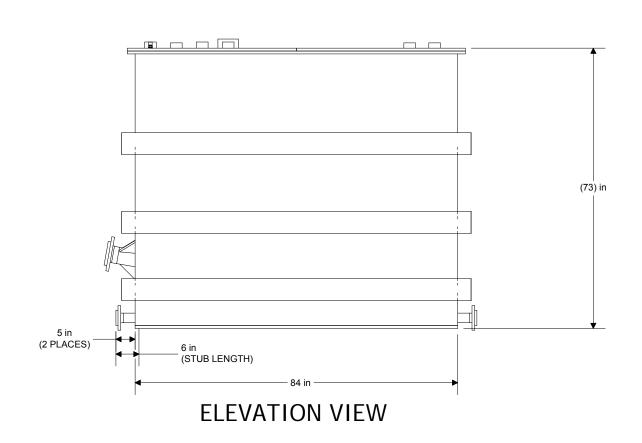
ATTACHMENT 2

HMR-TNK-3&4 INFORMATION









FABRICATION STATUS

PLEASE CHECK BOX AND SIGN WHEN COMPLETED

- ☐ COMPLETED NO CHANGES
- ☐ COMPLETED PER REDLINE CHANGES
- NOT COMPLETED, DESIGN CHANGES REQUIRED

DATE

NOTES:

- PRIMARY TANK SHALL BE FABRICATED FROM 3/4" THICK POLYPROPYLENE.
- 2. ALL PIPING AND FITTINGS TO BE CPVC SCH 80.
- 3. ALL SURFACES TO BE SEALED WITH EPDM GASKET TAPE.
- 4. SOME SUPPORTS NOT SHOWN FOR CLARITY

REV.	DATE:	BY:	DESCF	RIPTION
0	11/21/2018	JB	ISSUED FOR	FABRICATION
		APPROV	/ALS	DATE
DRAWN	I BY:		JB	11/21/2018
CHECK	ED BY:		JB	11/21/2018
APPRO	VED BY:		SS	11/21/2018

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TITLE: APPLE, INC. - ARIA 500 GALLON PRODELTA BATCH

MECHANICAL FABRICATION SIZE DWG. NO.

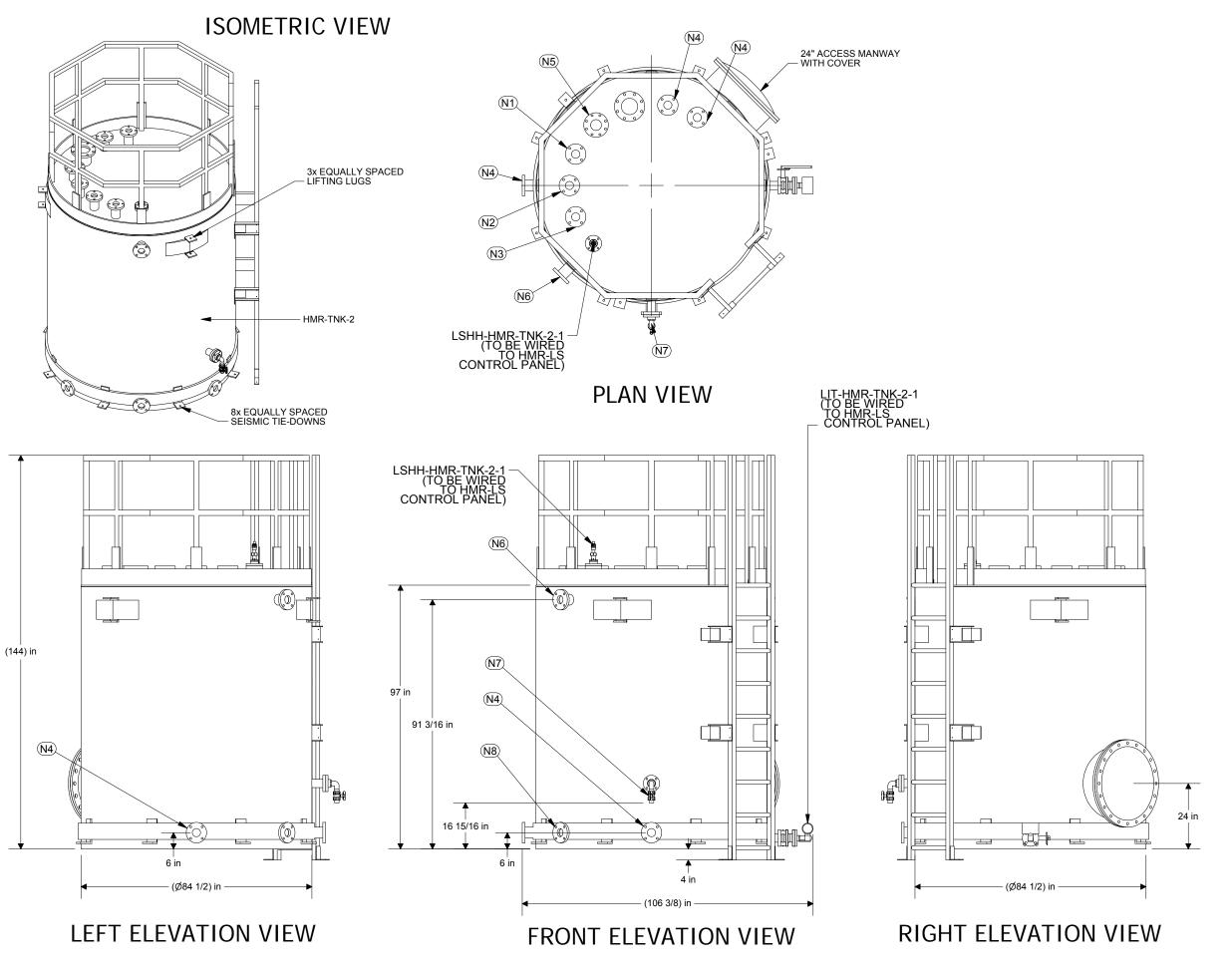
181320-MF-102 SCALE: NTS

SHEET: 2 OF 4

REVISION

ATTACHMENT 3

HMC-TNK-2 INFORMATION



NOZZLE SCHEDULE						
NOZZLE	DESCRIPTION	QTY	SERVICE			
N1	3" FLANGE	1	INLET FROM GW-LS			
N2	3" FLANGE	1	INLET FROM SWS-LS			
N3	3" FLANGE	1	INLET FROM HMR DIVERSION			
N4	3" FLANGE	5	SPARE			
N5	4" FLANGE	1	VENT			
N6	3" FLANGE	1	OVERFLOW			
N7	1" FNPT	1	SAMPLE PORT			
N8	3" FLANGE	1	SUCTION PORT			

NOTES

- MATERIALS OF CONSTRUCTION:

 A) TANK TO BE FABRICATED FROM FRP.
 B) ALL PIPING AND FITTINGS TO BE CPVC SCH 80.
 C) HARDWARE TO BE 18-8 SS.
- ALL SURFACES TO BE SEALED WITH EPDM GASKET.
 SOME SUPPORTS NOT SHOWN FOR CLARITY. ANCHOR
- BOLTS TO BE SIZED BY WASTECH, PROVIDED AND INSTALLED BY OTHERS.

 4. INSTALLATION, INTERCONNECTING PIPING AND WIRING CONTROL OF THE PROVIDED AND THE PROVIDED AN
- INSTALLATION, INTERCONNECTING PIPING AND WIRING SUPPLIED AND INSTALLED BY OTHERS. INSTALLER TO PROVIDE ADEQUATE VENTILATION TO THE TANKS.
- 5. APPROXIMATE EQUIPMENT WEIGHTS: A) DRY WEIGHT: 2000 LBS B) OPERATING WEIGHT: 23000 LBS

REV.	DATE:	BY:	DESCRIPTION
4	03/31/2015	MF	ISSUED FOR FABRICATION
3	01/30/2015	MF	RESUBMITTED FOR APPROVAL
2	01/13/2015	MF	RESUBMITTED FOR APPROVAL
1	12/02/2014	MF	SUBMITTED FOR APPROVAL
0	10/21/2014	MF	DRAFT

APPRO	OVALS	DATE
DRAWN BY:	MF	10/21/2014
PROJECT ENG.:	JB	
ENGINEERING MANAGER:	SS	

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REVISION

TITLE: ARIA
HEAVY METALS RINSE DIVERSION TANK
MECHANICAL GENERAL ARRANGEMENT

DWG. NO. 141190-MG-701

B 141190-WG-701

SCALE: NTS SHEET: 1 OF 3

ATTACHMENT 4

LEAK TEST RECORDS

PAGE 3 OF 4

MULTIPLE SYSTEMS PRESSURE RETENTION TESTS REPORT

AS OF 4/16/2019 (READ ONLY/PRINT)

PROPOSAL # 20826 **REPORT DATE** 3/21/2017

REPORT #

1245

EST LOCATION: ARIA - 3250 S	Scott Blvd Santa	Clara / Mec	hanical Yard	d		TOOL:	Waste	Systems
SYSTEM		WORKING PRESSURE	STA PRESSURE	RT TIME	FINI PRESSURE	SH TIME	PASS	FAIL
Heavy Metal Rinse: Tested 2" Primary CF Tank-2 POC to HMR-VMB-2	PVC Line from HMR- & to HMC-Tank -2 POC.	NA	56psi	6:00am	56psi	7:00am	DM	
Heavy Metal Rinse: Tested 4" Containme Tank-2 POC to HMR-VMB-2		NA	6psi	6:00am	6psi	7:00am	DM	
Heavy Metal Concentrate: Tested 1" to 2	" Primary CPVC Line	NA	58psi	6:00am	58psi	7:00am	DM	
Heavy Metal Concentrate: Tested 4" Con	ain & HMC-Tank-2 POC. tainment Line from ain & HMC-Tank-2 POC.	NA NA	6psi	6:00am	6psi	7:00am	DM	
Sodium Hydroxide: Tested 1/2" Primary I Station POC to HMR	PFA Line from Lift -Tank-3 POC.	NA	150psi	6:00am	150psi	7:00am	DM	
Sodium Hydroxide: Tested 2" Containme Station POC to HMR	nt Line from Lift -Tank-3 POC.	NA	6psi	6:00am	6psi	7:00am	DM	
TYPE: PNEUMATIC X	HYDROSTATIO	C N	IEDIA Nitr	ogen		-		-
TEST GAUGE: MAKE	Exsel		SERIAL#	49899, 49	9829, 52218,	PSIG:	0-200, 0-200,	0-15PSI
COMMENTS: SENSITIVITY:	1psi	CAI	LIBRATION	DUE DAT	E: 1/10/20 &	2/27/20		
TEST WITNESSED BY:	Demar Mills				TEST D	ATE:	3/21/2017	7
TEST PERFORMED BY: MUR	RAY COMPANY					DATE:	3/21/2017	7

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MULTIPLE SYSTEMS PRESSURE RETENTION TESTS REPORT

AS OF 4/16/2019 (READ ONLY/PRINT) **REPORT DATE** 3/21/2017

PROPOSAL # 20826

REPORT #

1246

ST LOCATION: ARIA - 325	0 Scott Blvd Santa	Clara / Mecl	hanical Yard			TOOL:	Waste S	ystem
SYSTE	M	WORKING PRESSURE	STA PRESSURE	RT TIME	FINI: PRESSURE	SH TIME	PASS	FA
ulfuric Acid: Tested 1/2" Primary Pf POC to HMR-Tank-3 F	FA Line from Lift Station POC.	NA	150psi	6:00am	150psi	7:00am	DM	
ulfuric Acid: Tested 2" Containment to HMR-Tank-3 POC.	t Line from Lift Station POC	NA	6psi	6:00am	6psi	7:00am	DM	
OF. DNEUMATIC	V LIVDDOCTATI	C	IEDIA NEA					
YPE:	X HYDROSTATION Perma Cal		IEDIA <u>Nitr</u> SERIAL <i>#</i>	ogen	N4292	PSIG:	0-300PS	CI.
DMMENTS: SENSITIVIT			SERIAL # LIBRATION			_	0-3007	<u> </u>
	·							
EST WITNESSED BY:	Demar Mills				TEST D	ATE:	3/21/2017	
EST PERFORMED BY: M					-	ATE:	3/21/2017	

PROPOSAL # 20826

MULTIPLE SYSTEMS PRESSURE RETENTION TESTS REPORT

AS OF 4/16/2019 (READ ONLY/PRINT) **REPORT DATE** 3/21/2017

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REPORT #

1243

EST LOCATION: ARIA - 3250 S	Scott Blvd Santa	Clara / Mecl	hanical Yard	k		TOOL:	Waste :	Systems
SYSTEM		WORKING PRESSURE	STA PRESSURE	RT TIME	FINI PRESSURE	SH TIME	PASS	FAIL
Heavy Metal Rinse: Tested 1" Primary CF Tank-3 POC to VDE-	PVC Line from HMR- 1 POC.	NA	52psi	6:00am	52psi	7:00am	DM	
Heavy Metal Rinse: Tested 4" Containme Tank 8 POC to VDE-		NA	5psi	6:00am	5psi	7:00am	DM	
Heavy Metal Rinse: Tested 1 1/2" Primar	CDVC Line from HMD.							
Lift Station POC to HMR-VME		NA	51psi	6:00am	51psi	7:00am	DM	
Heavy Metal Rinse: Tested 4" Containme Lift Station POC to HMR-VME		NA	5psi	6:00am	5psi	7:00am	DM	
Heavy Metal Rinse: Tested 1 1/2" Primary Lift Station POC to HMR-VME		NA	51psi	6:00am	51psi	7:00am	DM	
Heavy Metal Rinse: Tested 4" Containme Lift Station POC to HMR-VME	nt Line from HMR- l-1 to HMC-Tank-2 POC	NA	5psi	6:00am	5psi	7:00am	DM	
TYPE: PNEUMATIC X	HYDROSTATIO	C M	EDIA Nitr	ogen				
TEST GAUGE: MAKE	Exsel		SERIAL#	49899, 49	9829, 52218,	PSIG:	0-200, 0-200,	0-15PSI
COMMENTS: SENSITIVITY:	1psi	CAL	IBRATION	DUE DAT	E: 1/10/20 &	2/27/20		
TEST WITNESSED BY:	Demar Mills				TEST D	ATE:	3/21/2017	7
TEST PERFORMED BY: MUR	RAY COMPANY					DATE:	3/21/2017	7

PROPOSAL # 20826

MULTIPLE SYSTEMS PRESSURE RETENTION TESTS REPORT

AS OF 4/16/2019 (READ ONLY/PRINT) **REPORT DATE** 3/21/2017

PAGE 2 OF 4

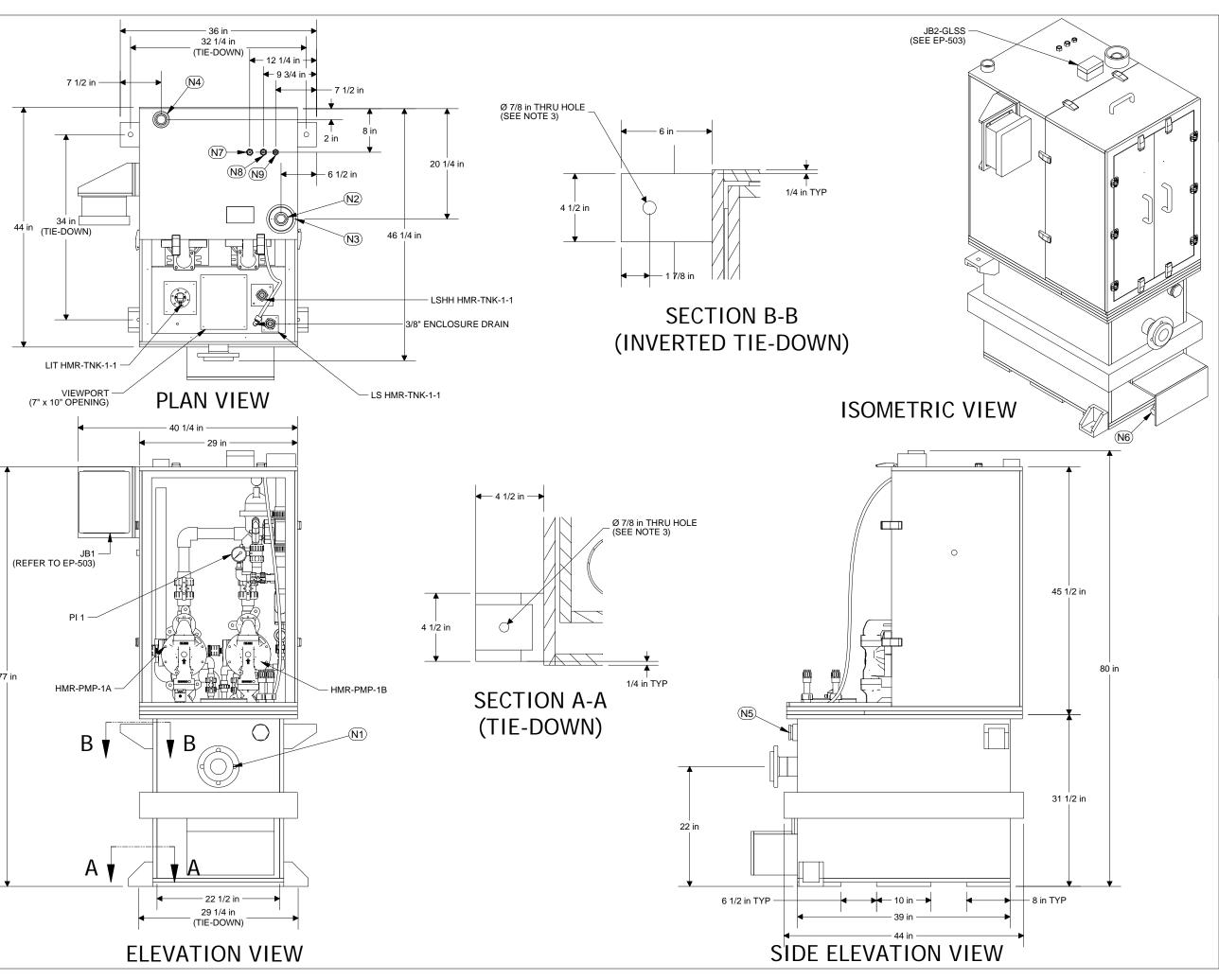
REPORT #

1244

EST LOCATION: ARIA - 3250 S	Scott Blvd Santa (Clara / Mecl	hanical Yard	<u> </u>		TOOL:	Waste S	Systems
		WORKING	STA		FINI			
SYSTEM		PRESSURE	PRESSURE	TIME	PRESSURE	TIME	PASS	FAIL
Slurry Waste / Heavy Metal Rinse: Teste from SLW/HMR-1 VMB PO	ed 2" Primary CPVC Line DC to HMR-Tank-2 POC.	NA	55psi	6:00am	55psi	7:00am	DM	
Slurry Waste / Heavy Metal Rinse: Testo from SLW/HMR-1 VMB PO	ed 4" Containment Line DC to HMR-Tank-2 POC.	NA	6psi	6:00am	6psi	7:00am	DM	
Slurry Waste / Heavy Metal Rinse: Teste from SLW/HMR-1 VMB PO		NA	55psi	6:00am	55psi	7:00am	DM	
Slurry Waste / Heavy Metal Rinse: Tests from SLW/HMR-1 VMB PC	ed 4" Containment Line DC to HMC-Tank-2 POC.	NA	6psi	6:00am	6psi	7:00am	DM	
Heavy Metal Rinse: Tested 2" Primary C Tank-2 POC to HMR-VMB-2	PVC Line from HMR- & to HMR-Tank -3 POC.	NA	56psi	6:00am	56psi	7:00am	DM	
Heavy Metal Rinse: Tested 4" Containme Tank-2 POC to HMR-VMB-2		NA	6psi	6:00am	6psi	7:00am	DM	
TYPE: PNEUMATIC X	HYDROSTATIO	C M	EDIA Nitr	ogen				
TEST GAUGE: MAKE	Exsel		SERIAL#		 9829, 52218,	PSIG:	0-200. 0-200.	0-15PSI
COMMENTS: SENSITIVITY:	1psi		_		E: 1/10/20 &			
TEST WITNESSED BY:	Demar Mills	_			TEST D	ATE:	3/21/2017	<i>,</i>
TEST PERFORMED BY: MUF	RRAY COMPANY					DATE:	3/21/2017	7

ATTACHMENT 5

LIFT STATION (HMC-LS and HMR-LS) INFORMATION



NOZZLE SCHEDULE								
	NOZZLE	DESCRIPTION	QTY	SERVICE				
	N1	3" FLANGE	1	INLET				
	N2	1-1/2" FNPT	1	DISCHARGE				
	N3	4" FNPT	1	DOUBLE CONTAINMENT				
	N4	2" FNPT	1	VENT				
	N5	2" FNPT	2	PLUGGED OVERFLOW				
	N6	1" FNPT	1	CONTAINMENT TANK DRAIN				
	N7	1/2" FNPT	1	CDA TO HMR-PMP-1A				
	N8	1/2" FNPT	1	CDA TO HMR-PMP-1B				
	N9	1/4" FNPT	1	CDA TO PD HMR-TNK-1-1				

- A) TANKS TO BE FABRICATED FROM 3/4" THICK WHITE POLYPROPYLENE.

 B) ACCESS DOORS AND HATCHES TO BE 1/4" THICK
- C) ALL PIPING AND FITTINGS TO BE SCH 80 CPVC. D) HARDWARE TO BE 18-8 SS.
- ALL SURFACES TO BE SEALED WITH PTFE GASKET TAPE. SOME SUPPORTS NOT SHOWN FOR CLARITY. ANCHOR BOLTS TO BE SIZED BY WASTECH, SUPPLIED AND INSTALLED BY OTHERS.
- INSTALLATION, INTERCONNECTING PIPING AND WIRING SUPPLIED AND INSTALLED BY OTHERS. INSTALLER TO PROVIDE ADEQUATE VENTILATION TO THE TANK.
- APPROXIMATE EQUIPMENT WEIGHTS:
- B) OPERATING WEIGHT: 1110 LB
- C) MAXIMUM WEIGHT: 1250 LBS 6. PŔIMARY TANK VOLUME: 80 GAL
- CONTAINMENT TANK VOLUME: 110 GAL

REV.	DATE:	BY:	DESCRIPTION
3	4/15/2015	MM	AS BUILT
2	3/31/2015	MM	ISSUED FOR FABRICATION
1	1/22/2015	MM	RESUBMITTED FOR APPROVAL
0	12/12/2014	MM	SUBMITTED FOR APPROVAL

,	DATE	
DRAWN BY:	MM	12/12/2014
PROJECT ENG.:	SS	
ENGINEERING MANAG	ER: SS	

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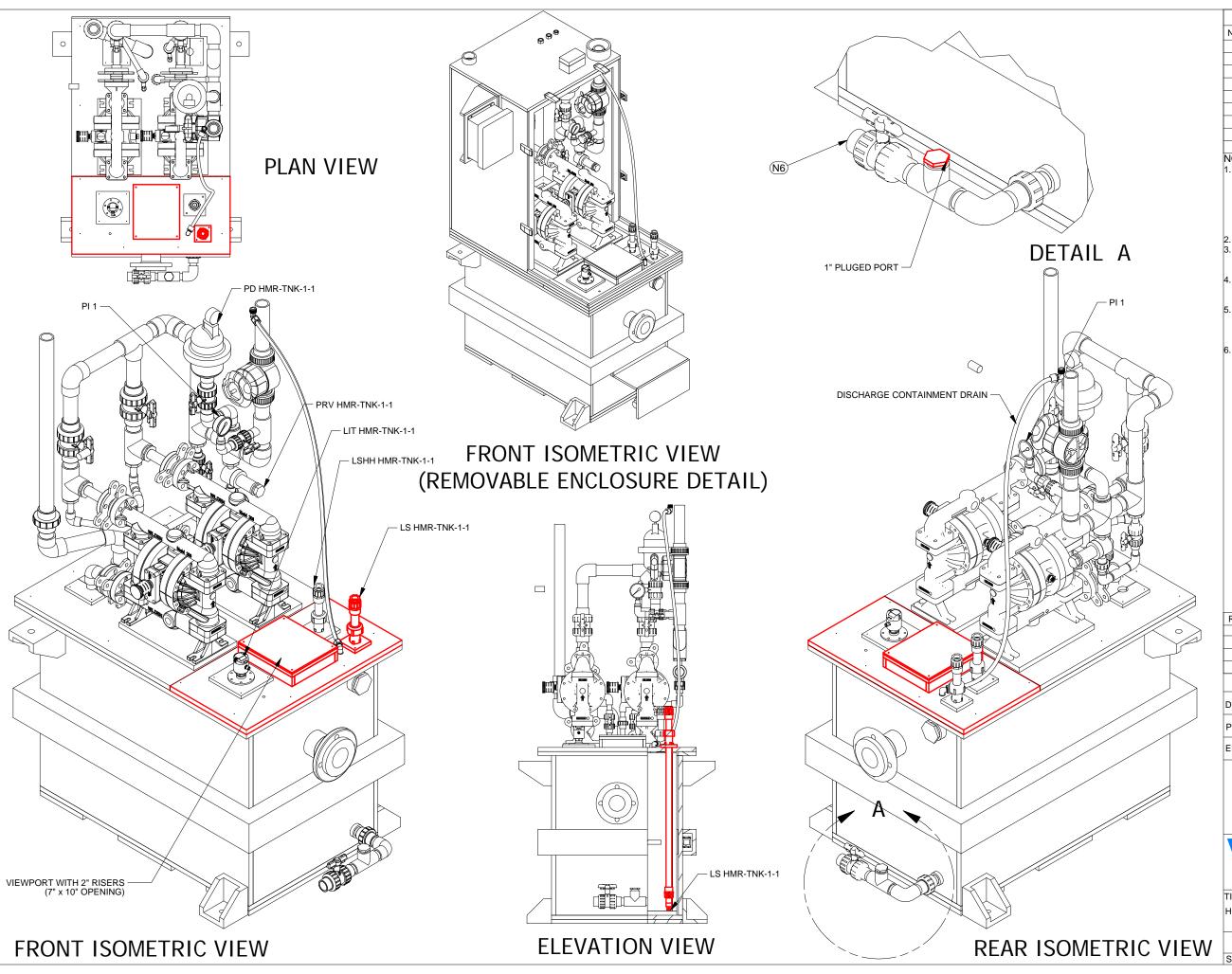
21201 Itasca Street, Chatsworth, California 91311-4922 Tel: (818) 998-3500 Fax: (818) 998-4939

HEAVY METAL RINSE PUMP LIFT STATION (HMR-LS)

MECHANICAL GENERAL ARRANGEMENT

141-190-MG-501

SHEET: 1 OF 3



	CHEDULE		
NOZZLE	DESCRIPTION	QTY	SERVICE
N1	3" FLANGE	1	INLET
N2	1-1/2" FNPT	1	DISCHARGE
N3	4" FNPT	1	DOUBLE CONTAINMENT
N4	2" FNPT	1	VENT
N5	2" FNPT	2	PLUGGED OVERFLOW
N6	1" FNPT	1	CONTAINMENT TANK DRAIN
N7	1/2" FNPT	1	CDA TO HMR-PMP-1A
N8	1/2" FNPT	1	CDA TO HMR-PMP-1B
N9	1/4" FNPT	1	CDA TO PD HMR-TNK-1-1

- NOTES:

 1. MATERIALS OF CONSTRUCTION:

 A) TANKS TO BE FABRICATED FROM 3/4" THICK WHITE POLYPROPYLENE.

 B) ACCESS DOORS AND HATCHES TO BE 1/4" THICK
 - CLEAR PVC
- C) ALL PIPING AND FITTINGS TO BE SCH 80 CPVC.
 D) HARDWARE TO BE 18-8 SS.
 ALL SURFACES TO BE SEALED WITH PTFE GASKET TAPE.
 SOME SUPPORTS NOT SHOWN FOR CLARITY, ANCHOR BOLTS TO BE SIZED BY WASTECH, SUPPLIED AND INSTALLED BY OTHERS.
- INSTALLED BY OTHERS.
 INSTALLATION, INTERCONNECTING PIPING AND WIRING SUPPLIED AND INSTALLED BY OTHERS. INSTALLER TO PROVIDE ADEQUATE VENTILATION TO THE TANK.

 APPROXIMATE EQUIPMENT WEIGHTS:

- A) DRY WEIGHT: 510 LB B) OPERATING WEIGHT: 1110 LB C) MAXIMUM WEIGHT: 1250 LBS
- . PŔIMARY TANK VOLUME: 80 GAL
- CONTAINMENT TANK VOLUME: 110 GAL

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	7 1.110 17.120	
DRAWN BY:	MM	12/12/2014
PROJECT ENG.:	JB	
ENGINEERING MANA	GER: SS	

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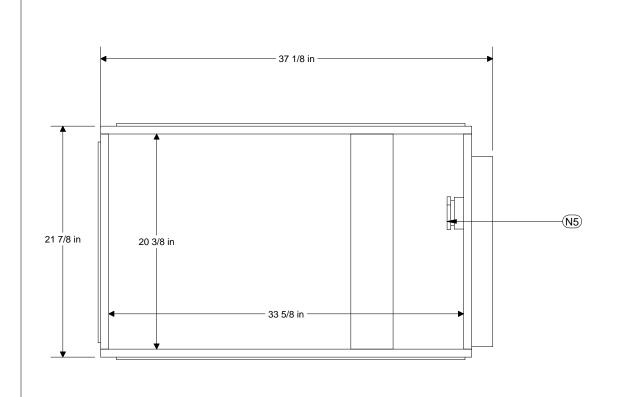


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HEAVY METAL RINSE PUMP LIFT STATION (HMR-LS) MECHANICAL GENERAL ARRANGEMENT

141190-MG-502

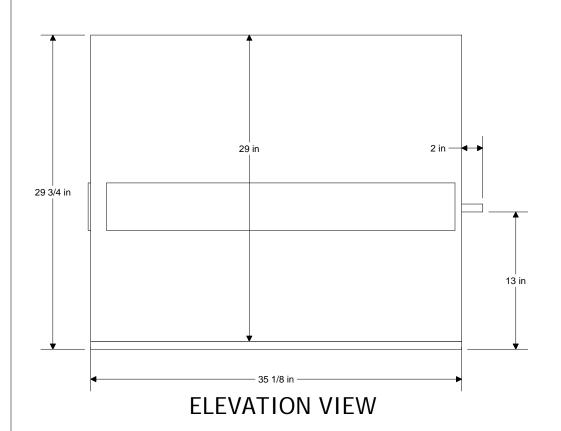
SHEET: 2 OF 3

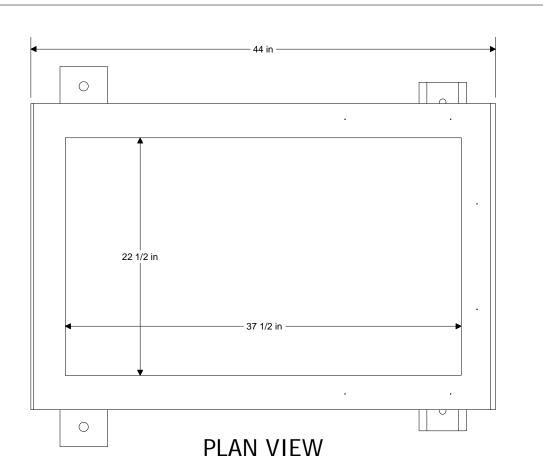


PRIMARY TANK

PLAN VIEW

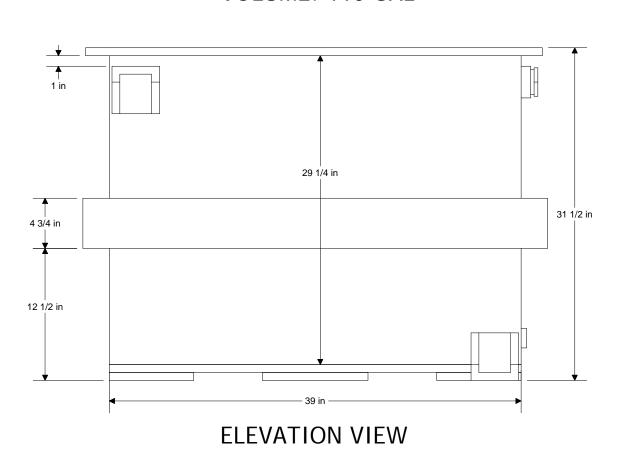
VOLUME: 80 GAL





CONTAINMENT TANK

VOLUME: 110 GAL



NOZZLE SCHEDULE				
NOZZLE	DESCRIPTION	QTY	SERVICE	
N1	3" FLANGE	1	INLET	
N2	1-1/2" FNPT	1	DISCHARGE	
N3	4" FNPT	1	DOUBLE CONTAINMENT	
N4	2" FNPT	1	VENT	
N5	2" FNPT	2	PLUGGED OVERFLOW	
N6	1" FNPT	1	CONTAINMENT TANK DRAIN	
N7	1/2" FNPT	1	CDA TO HMR-PMP-1A	
N8	1/2" FNPT	1	CDA TO HMR-PMP-1B	
N9	1/4" FNPT	1	CDA TO PD HMR-TNK-1-1	
MOTEC.		•	•	

NOTES

- 1. MATERIALS OF CONSTRUCTION:
- A) TANKS TO BE FABRICATED FROM 3/4" THICK WHITE POLYPROPYLENE.
- B) ACCESS DOORS AND HATCHES TO BE 1/4" THICK CLEAR PVC
- C) ALL PIPING AND FITTINGS TO BE SCH 80 CPVC. D) HARDWARE TO BE 18-8 SS.
- ALL SURFACES TO BE SEALED WITH PTFE GASKET TAPE. SOME SUPPORTS NOT SHOWN FOR CLARITY. ANCHOR
- BOLTS TO BE SIZED BY WASTECH, SUPPLIED AND INSTALLED BY OTHERS.
- INSTALLATION, INTERCONNECTING PIPING AND WIRING SUPPLIED AND INSTALLED BY OTHERS. INSTALLER TO PROVIDE ADEQUATE VENTILATION TO THE TANK.
- 5. APPROXIMATE EQUIPMENT WEIGHTS:
 A) DRY WEIGHT: 510 LB
- B) OPERATING WEIGHT: 1110 LB
- C) MAXIMUM WEIGHT: 1250 LBS
- 6. PRIMARY TANK VOLUME: 80 GAL
- CONTAINMENT TANK VOLUME: 80 GAL

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 SUBMITTED FOR APPROVAL

APPROVALS DATE

DRAWN BY: MM 12/12/2014

PROJECT ENG.: JB

ENGINEERING MANAGER: SS

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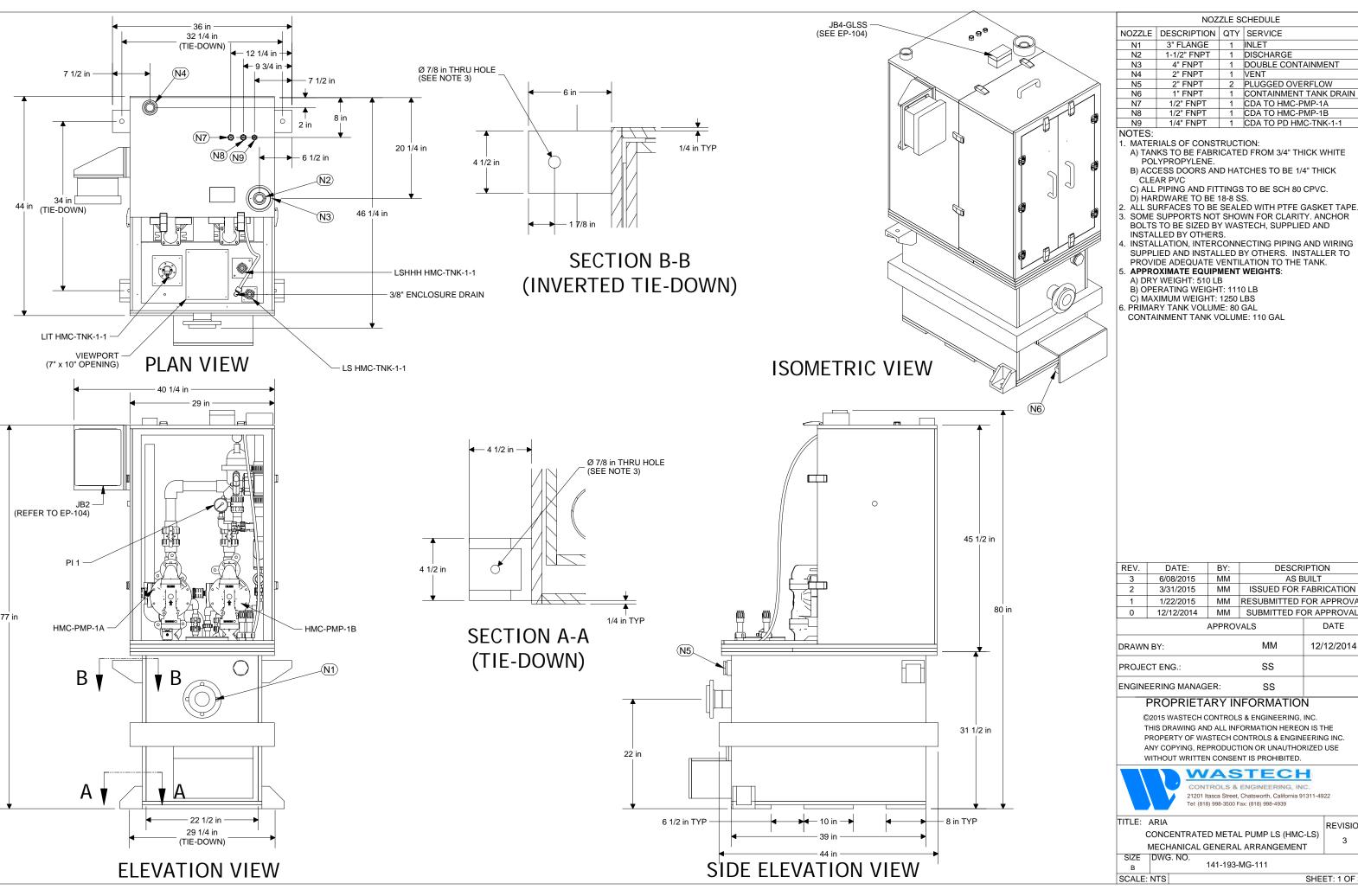
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HEAVY METAL RINSE PUMP LIFT STATION (HMR-LS)

MECHANICAL GENERAL ARRANGEMENT

SIZE DWG. NO. 141190-MG-503

SHEET: 3 OF 3



NOZZLE SCHEDULE				
	NOZZLE	DESCRIPTION	QTY	SERVICE
	N1	3" FLANGE	1	INLET
	N2	1-1/2" FNPT	1	DISCHARGE
	N3	4" FNPT	1	DOUBLE CONTAINMENT
	N4	2" FNPT	1	VENT
	N5	2" FNPT	2	PLUGGED OVERFLOW
	N6	1" FNPT	1	CONTAINMENT TANK DRAIN
	N7	1/2" FNPT	1	CDA TO HMC-PMP-1A
	N8	1/2" FNPT	1	CDA TO HMC-PMP-1B
	NO	1/4" ENIDT	1	CDA TO DD HMC TNK 1.1

- SOME SUPPORTS NOT SHOWN FOR CLARITY. ANCHOR BOLTS TO BE SIZED BY WASTECH, SUPPLIED AND
- INSTALLATION, INTERCONNECTING PIPING AND WIRING SUPPLIED AND INSTALLED BY OTHERS. INSTALLER TO PROVIDE ADEQUATE VENTILATION TO THE TANK.
- CONTAINMENT TANK VOLUME: 110 GAL

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0	12/12/2014	MM	SUBMITTED FOR APPROVAL

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DRAWN BY:	MM	12/12/2014
PROJECT ENG.:	SS	
ENGINEERING MANAG	SER: SS	

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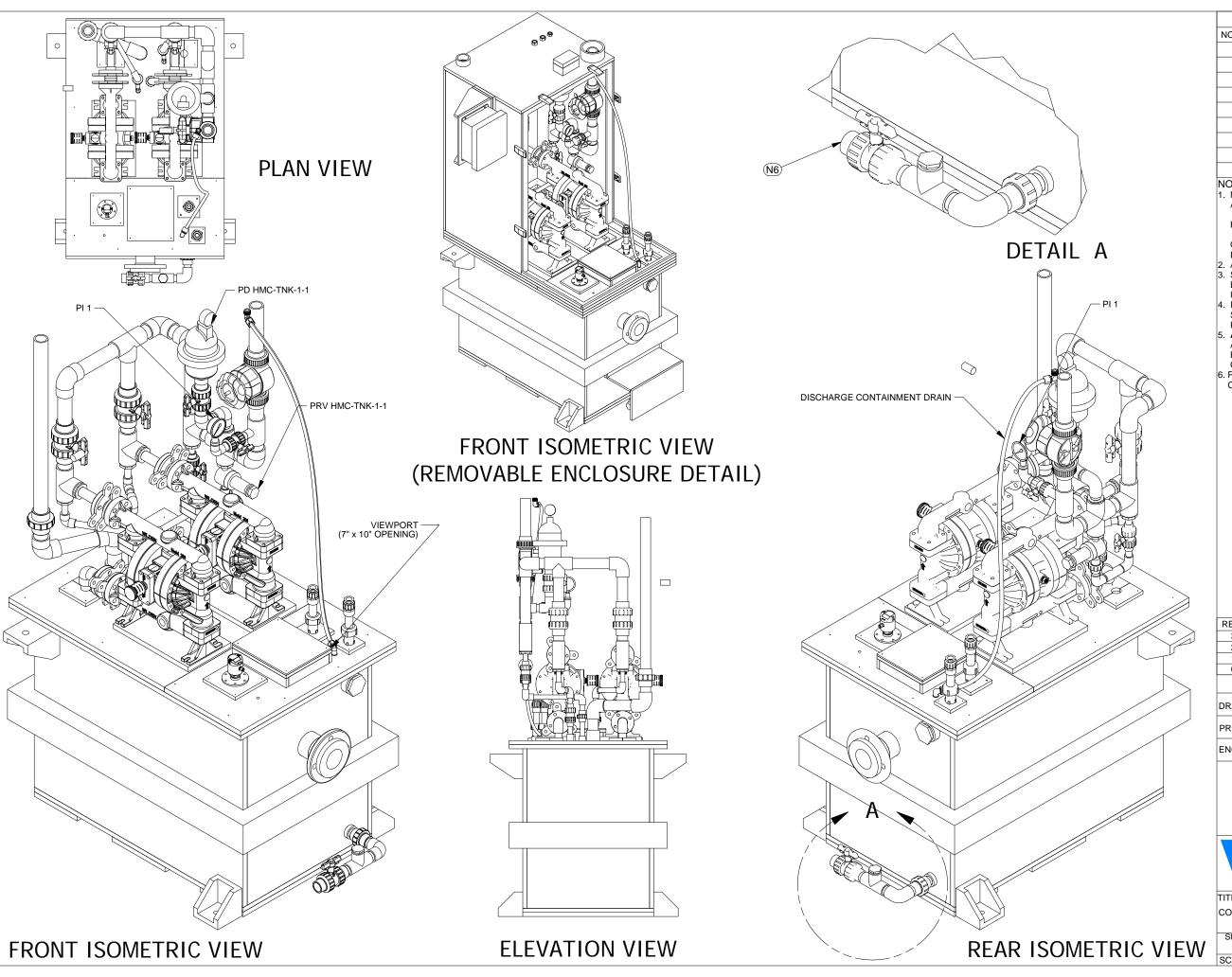
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CONCENTRATED METAL PUMP LS (HMC-LS)

SHEET: 1 OF 3

REVISION



NOZZLE SCHEDULE				
NOZZLE	DESCRIPTION	QTY	SERVICE	
N1	3" FLANGE	1	INLET	
N2	1-1/2" FNPT	1	DISCHARGE	
N3	4" FNPT	1	DOUBLE CONTAINMENT	
N4	2" FNPT	1	VENT	
N5	2" FNPT	2	PLUGGED OVERFLOW	
N6	1" FNPT	1	CONTAINMENT TANK DRAIN	
N7	1/2" FNPT	1	CDA TO HMC-PMP-1A	
N8	1/2" FNPT	1	CDA TO HMC-PMP-1B	
N9	1/4" FNPT	1	CDA TO PD HMC-TNK-1-1	

- NOTES:

 1. MATERIALS OF CONSTRUCTION:

 A) TANKS TO BE FABRICATED FROM 3/4" THICK WHITE POLYPROPYLENE.

 B) ACCESS DOORS AND HATCHES TO BE 1/4" THICK
- CLEAR PVC C) ALL PIPING AND FITTINGS TO BE SCH 80 CPVC. D) HARDWARE TO BE 18-8 SS.
- ALL SURFACES TO BE SEALED WITH PTFE GASKET TAPE.
- SOME SUPPORTS NOT SHOWN FOR CLARITY. ANCHOR BOLTS TO BE SIZED BY WASTECH, SUPPLIED AND INSTALLED BY OTHERS.
- INSTALLATION, INTERCONNECTING PIPING AND WIRING SUPPLIED AND INSTALLED BY OTHERS. INSTALLER TO PROVIDE ADEQUATE VENTILATION TO THE TANK.
- APPROXIMATE EQUIPMENT WEIGHTS:

- A) DRY WEIGHT: 510 LB
 B) OPERATING WEIGHT: 1110 LB
 C) MAXIMUM WEIGHT: 1250 LBS
 6. PRIMARY TANK VOLUME: 80 GAL
 CONTAINMENT TANK VOLUME: 110 GAL

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ENGINEERING MANAGI	ER: SS	

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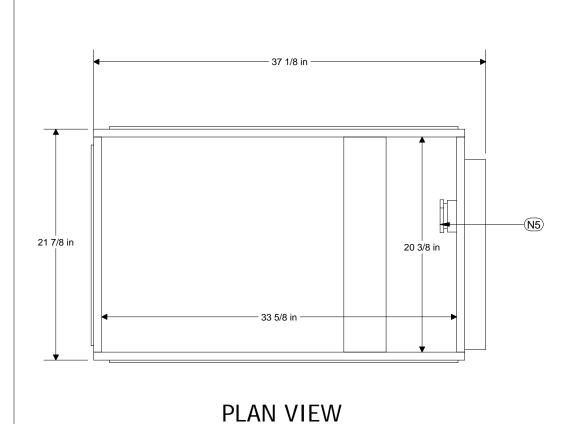


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CONCENTRATED HEAVY METAL PUMP LS (HMC-LS) MECHANICAL GENERAL ARRANGEMENT

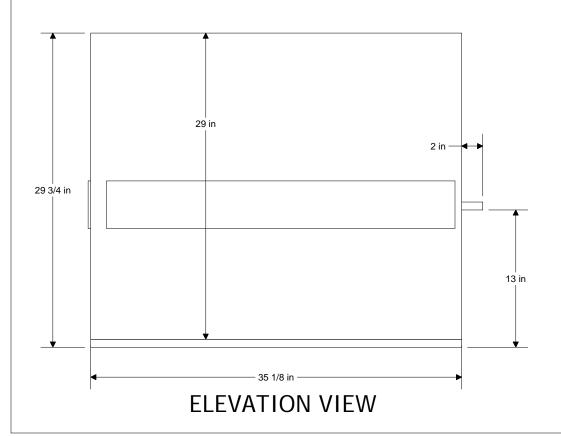
141193-MG-112

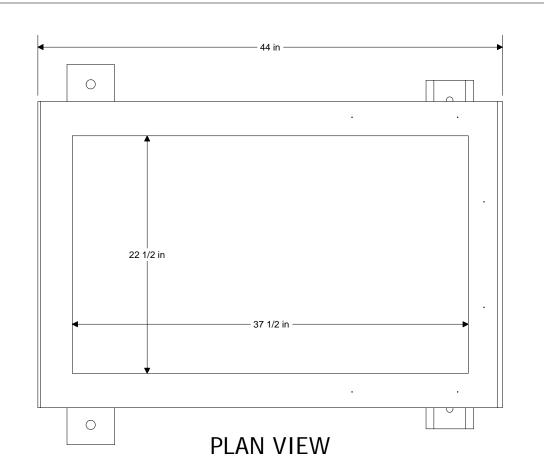
SHEET: 2 OF 3



PRIMARY TANK

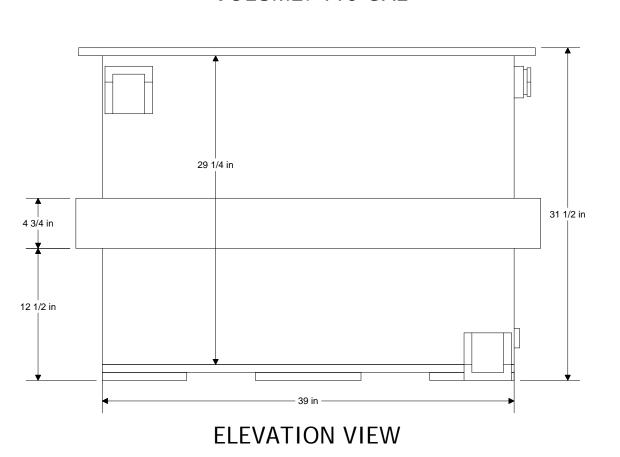
VOLUME: 80 GAL





CONTAINMENT TANK

VOLUME: 110 GAL



NOZZLE SCHEDULE			
NOZZLE	DESCRIPTION	QTY	SERVICE
N1	3" FLANGE	1	INLET
N2	1-1/2" FNPT	1	DISCHARGE
N3	4" FNPT	1	DOUBLE CONTAINMENT
N4	2" FNPT	1	VENT
N5	2" FNPT	2	PLUGGED OVERFLOW
N6	1" FNPT	1	CONTAINMENT TANK DRAIN
N7	1/2" FNPT	1	CDA TO HMC-PMP-1A
N8	1/2" FNPT	1	CDA TO HMC-PMP-1B
N9	1/4" FNPT	1	CDA TO PD HMC-TNK-1-1

- N9 | 1/4" FNP1 | 1 | CDA TO PD HMC-TNK-1-1

 NOTES:

 1. MATERIALS OF CONSTRUCTION:

 A) TANKS TO BE FABRICATED FROM 3/4" THICK WHITE POLYPROPYLENE.

 B) ACCESS DOORS AND HATCHES TO BE 1/4" THICK CLEAR PVC

 C) ALL PIPING AND FITTINGS TO BE SCH 80 CPVC.
 D) HARDWARE TO BE 18-8 SS.

 2. ALL SURFACES TO BE SEALED WITH PTFE GASKET TAPE.
- .. ALL SURFACES TO BE SEALED WITH PTFE GASKET TAPE.

 SOME SUPPORTS NOT SHOWN FOR CLARITY. ANCHOR
 BOLTS TO BE SIZED BY WASTECH, SUPPLIED AND
 INSTALLED BY OTHERS.

 INSTALLATION, INTERCONNECTING PIPING AND WIRING
 SUPPLIED AND INSTALLED BY OTHERS. INSTALLER TO
 PROVIDE ADEQUATE VENTILATION TO THE TANK.
- APPROXIMATE EQUIPMENT WEIGHTS:

- A) DRY WEIGHT: 510 LB
 B) OPERATING WEIGHT: 1110 LB
 C) MAXIMUM WEIGHT: 1250 LBS
 6. PRIMARY TANK VOLUME: 80 GAL
- CONTAINMENT TANK VOLUME: 110 GAL

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PROJE	CT ENG.:		SS	
ENGINE	EERING MANAG	ER:	SS	

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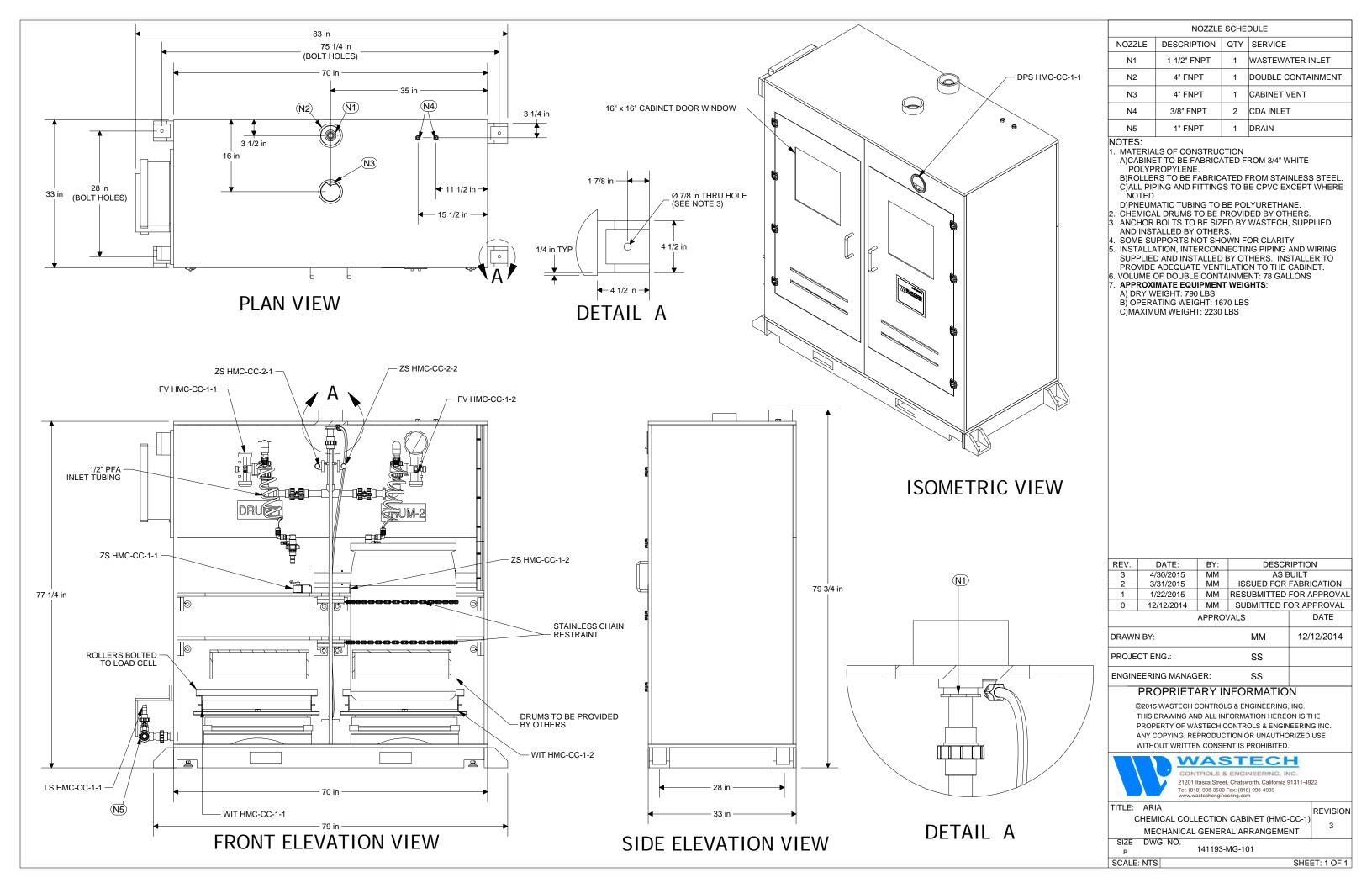
Tel: (818) 998-3500 Fax: (818) 998-4939

CONCENTRATED HEAVY METAL PUMP LS (HMC-LS) MECHANICAL GENERAL ARRANGEMENT

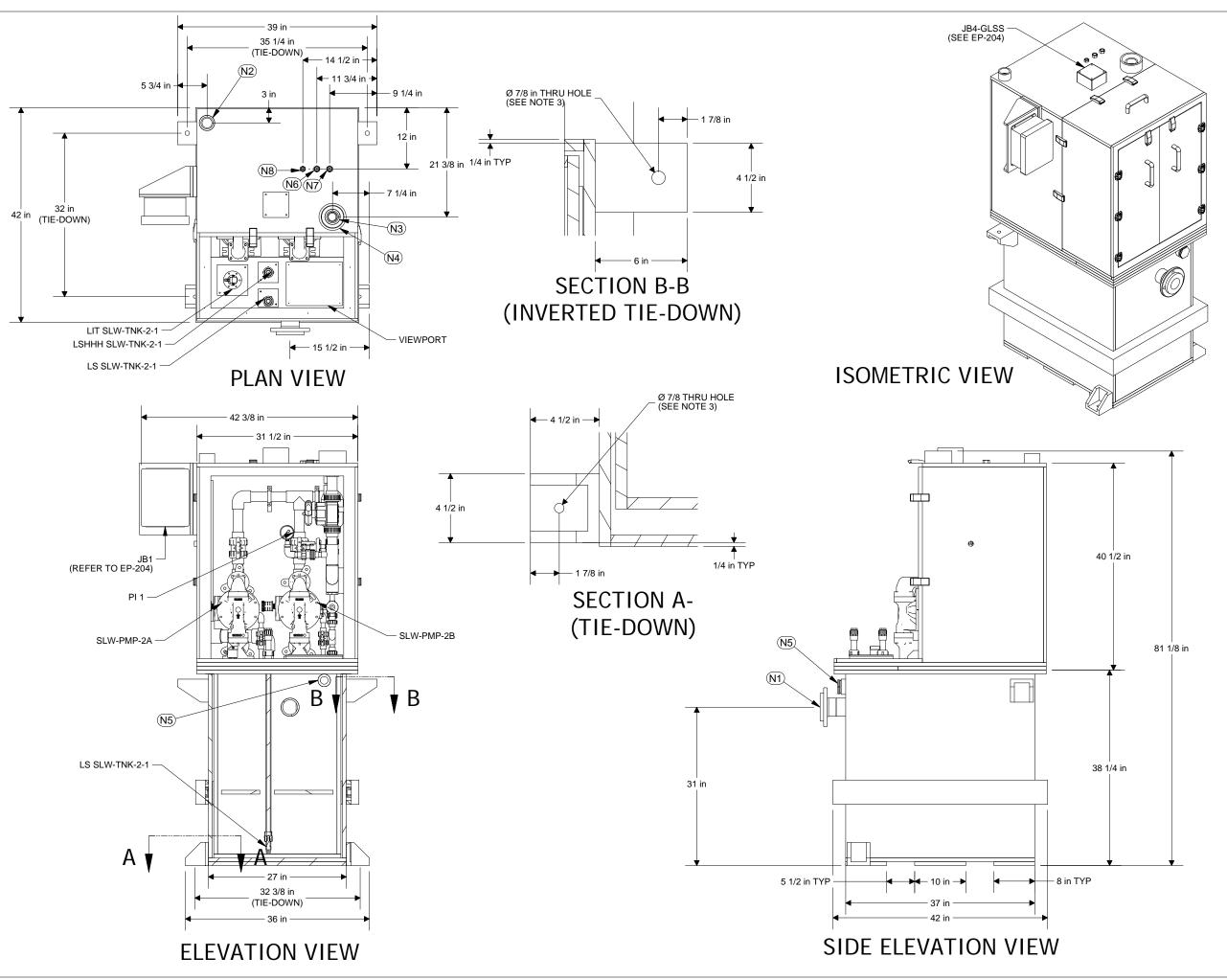
141193-MG-113

SHEET: 3 OF 3

<u>ATTACHMENT 6</u> COLLECTION CABINET (HMC-CC) INFORMATION



<u>ATTACHMENT 7</u> LIFT STATION (SLW-LS2) INFORMATION



NOZZLE SCHEDULE					
NOZZLE	DESCRIPTION	QTY	SERVICE		
N1	3" FLANGE	1	INLET		
N2	2" FNPT	1	VENT		
N3	2" FNPT	1	PUMPED DISCHARGE		
N4	4" FNPT	1	DOUBLE CONTAINMENT		
N5	2" FNPT	2	PLUGGED OVERFLOW		
N6	1/2" FNPT	1	CDA TO SLW-PMP-2A		
N7	1/2" FNPT	1	CDA TO SLW-PMP-2B		
N8	1/4" FNPT	1	CDA TO PD SI W-TNK-2-1		

NOTES:

- 1. MATERIALS OF CONSTRUCTION:
- A) TANKS TO BE FABRICATED FROM 3/4" THICK WHITE POLYPROPYLENE.
- B) ACCESS DOORS AND HATCHES TO BE 1/4" THICK CLEAR PVC.
- C) ALL PIPING AND FITTINGS TO BE SCH 80 CPVC. D) HARDWARE TO BE 18-8 SS.
- ALL SURFACES TO BE SEALED WITH PTFE GASKET TAPE. SOME SUPPORTS NOT SHOWN FOR CLARITY. ANCHOR
- BOLTS TO BE SUPPLIED AND INSTALLED BY OTHERS.
- 4. INSTALLATION, INTERCONNECTING PIPING AND WIRING SUPPLIED AND INSTALLED BY OTHERS. INSTALLER TO PROVIDE ADEQUATE VENTILATION TO THE TANK.
- APPROXIMATE EQUIPMENT WEIGHTS:

 A) DRY WEIGHT: 620 LBS

 B) OPERATING WEIGHT: 1700 LBS

 C) MAXIMUM WEIGHT: 1885 LBS
- 6. TÁNK VOLUME: 142 GAL

REV.	DATE:	BY:	DESCRIPTION	
4	7/07/2015	MM	REVISED AS BUILT	
3	5/02/2015	MM	AS BUILT	
2	3/31/2015	MM	ISSUED FOR FABRICATION	
1	1/22/2015	MM	RESUBMITTED FOR APPROVAL	
0	12/12/2014	MM	SUBMITTED FOR APPROVAL	

	APPROVALS		DATE
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PROJECT ENG.:	S	s	
ENGINEERING MANA	GER: S	S	

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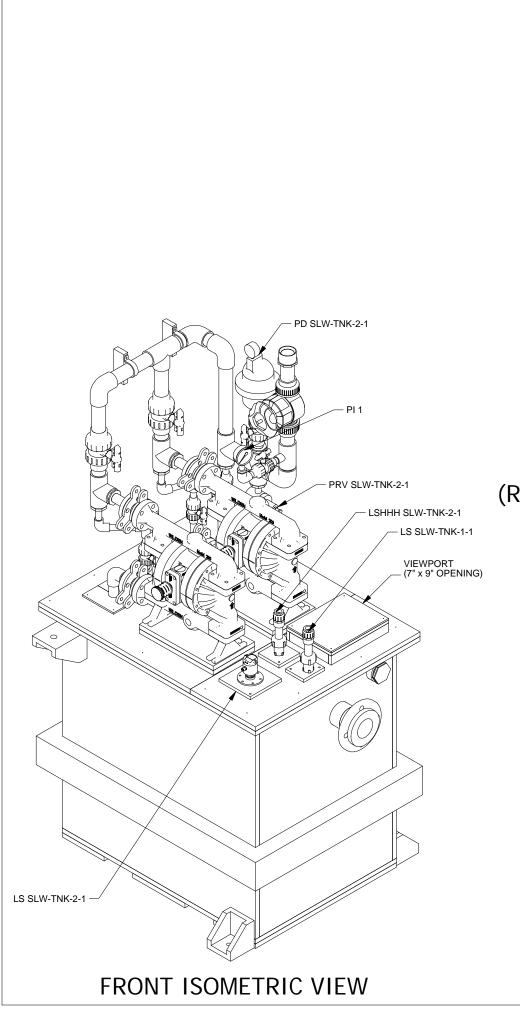
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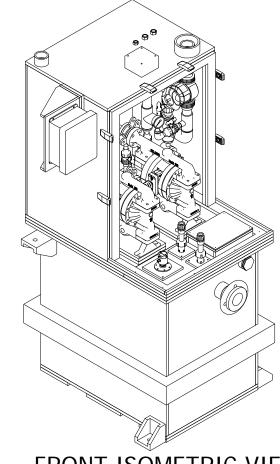
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TITLE: ARIA
GRINDER AREA LIFT STATION (SLW-LS2)
MECHANICAL GENERAL ARRANGEMENT

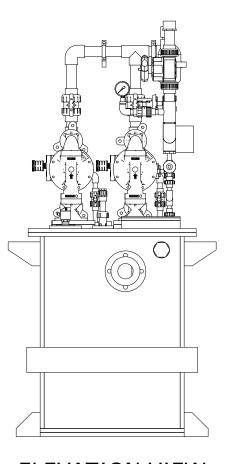
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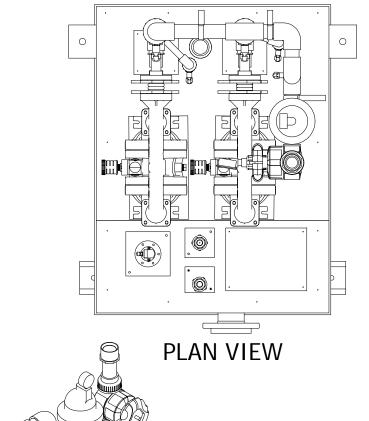




FRONT ISOMETRIC VIEW (REMOVABLE ENCLOSURE DETAIL)



ELEVATION VIEW



	NOZZLE SCHEDULE					
NOZZLE	DESCRIPTION	QTY	SERVICE			
N1	3" FLANGE	1	INLET			
N2	2" FNPT	1	VENT			
N3	2" FNPT	1	PUMPED DISCHARGE			
N4	4" FNPT	1	DOUBLE CONTAINMENT			
N5	2" FNPT	2	PLUGGED OVERFLOW			
N6	1/2" FNPT	1	CDA TO SLW-PMP-2A			
N7	1/2" FNPT	1	CDA TO SLW-PMP-2B			
N8	1/4" FNPT	1	CDA TO PD SLW-TNK-2-1			
NOTES:	NALO OF CONOT	DUOT	101			

- MATERIALS OF CONSTRUCTION:
 A) TANKS TO BE FABRICATED FROM 3/4" THICK WHITE POLYPROPYLENE.
 B) ACCESS DOORS AND HATCHES TO BE 1/4" THICK
- CLEAR PVC.
- C) ALL PIPING AND FITTINGS TO BE SCH 80 CPVC.
 D) HARDWARE TO BE 18-8 SS.
 ALL SURFACES TO BE SEALED WITH PTFE GASKET TAPE.
- SOME SUPPORTS NOT SHOWN FOR CLARITY. ANCHOR BOLTS TO BE SUPPLIED AND INSTALLED BY OTHERS.
- INSTALLATION, INTERCONNECTING PIPING AND WIRING SUPPLIED AND INSTALLED BY OTHERS. INSTALLER TO PROVIDE ADEQUATE VENTILATION TO THE TANK.

 APPROXIMATE EQUIPMENT WEIGHTS:
- A) DRY WEIGHT: 620 LBS
- B) OPERATING WEIGHT: 1700 LBS C) MAXIMUM WEIGHT: 1885 LBS 6. TANK VOLUME: 142 GAL

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REAR ISOMETRIC VIEW

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2	3/31/2015	MM	ISSUED FOR F	FABRICATION
1	1/22/2015	MM	RESUBMITTED F	OR APPROVAL
0	12/12/2014	MM	SUBMITTED FO	OR APPROVAL

	DATE		
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PROJECT ENG.:	SS		
ENGINEERING MANA	GER: SS		

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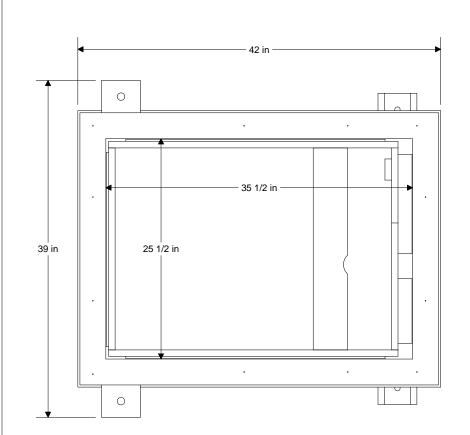
21201 Itasca Street, Chatsworth, California 91311-4922 Tel: (818) 998-3500 Fax: (818) 998-4939

REVISION

GRINDER AREA LIFT STATION (SLW-LS2) MECHANICAL GENERAL ARRANGEMENT

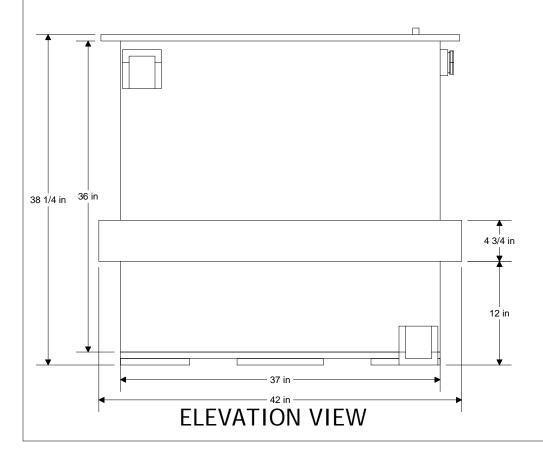
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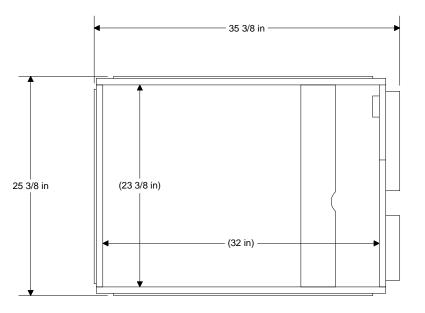
SCALE: NTS SHEET: 2 OF 3



PLAN VIEW

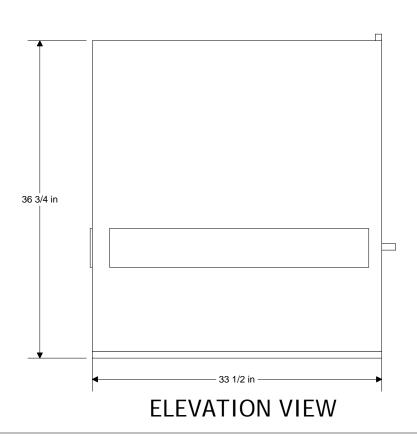
CONTAINMENT TANK VOLUME: 142 GAL





PLAN VIEW

PRIMARY TANK VOLUME: 116 GAL



NOZZLE SCHEDULE				
	NOZZLE	DESCRIPTION	QTY	SERVICE
	N1	3" FLANGE	1	INLET
	N2	2" FNPT	1	VENT
	N3	2" FNPT	1	PUMPED DISCHARGE
	N4	4" FNPT	1	DOUBLE CONTAINMENT
	N5	2" FNPT	2	PLUGGED OVERFLOW
	N6	1/2" FNPT	1	CDA TO SLW-PMP-2A
	N7	1/2" FNPT	1	CDA TO SLW-PMP-2B
	N8	1/4" FNPT	1	CDA TO PD SLW-TNK-2-1
	NOTEO			

- 1. MATERIALS OF CONSTRUCTION:

 A) TANKS TO BE FABRICATED FROM 3/4" THICK WHITE POLYPROPYLENE.
- B) ACCESS DOORS AND HATCHES TO BE 1/4" THICK CLEAR PVC.
- C) ALL PIPING AND FITTINGS TO BE SCH 80 CPVC. D) HARDWARE TO BE 18-8 SS.
- ALL SURFACES TO BE SEALED WITH PTFE GASKET TAPE.
- SOME SUPPORTS NOT SHOWN FOR CLARITY. ANCHOR BOLTS TO BE SUPPLIED AND INSTALLED BY OTHERS.
- INSTALLATION, INTERCONNECTING PIPING AND WIRING SUPPLIED AND INSTALLED BY OTHERS. INSTALLER TO PROVIDE ADEQUATE VENTILATION TO THE TANK.
- APPROXIMATE EQUIPMENT WEIGHTS: A) DRY WEIGHT: 620 LBS
- B) OPERATING WEIGHT: 1700 LBS
- C) MAXIMUM WEIGHT: 1885 LBS
- 6. TANK VOLUME: 142 GAL

REV.	DATE:	BY:	DESCRIPTION
4	7/07/2015	MM	REVISED AS BUILT
3	6/08/2015	MM	AS BUILT
2	3/31/2015	MM	ISSUED FOR FABRICATION
1	1/22/2015	MM	RESUBMITTED FOR APPROVAL
0	12/12/2014	MM	SUBMITTED FOR APPROVAL
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DATE APPROVALS MM DRAWN BY: 09/22/2014 JB PROJECT ENG.: ENGINEERING MANAGER:

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MECHANICAL GENERAL ARRANGEMENT

REVISION

141193-MG-213

SCALE: NTS SHEET: 3 OF 3